

REMARKS

Claims 1-24 were pending prior to the above amendments. Claims 3-4, 15-16 and 19-24 are canceled. Claims 1-2, 5-8, 13-14 and 18 are amended. Claims 25-63 are newly presented.

The Examiner rejected Claims 1-4, 13-16 and 19-21 under 35 U.S.C. § 103(a) as being anticipated by U.S. Patent 5,307,459 (“Petersen”), in view of U.S. Patent 6,584,436 (“Hellestrand”). With respect to independent Claim 1, the Examiner states:

1. As per claim 1, Petersen et al teach a method for communicating data of an electronic device to a network comprising:

(a) receiving data packets from the network through a network interface (col. 6 lines 23-27);

(b) storing the data packets received from the network in a first buffer in memory (col. 6, lines 29-32; and Fig. 5);

(c) transmitting the data packets received from the network to through a software interface (col. 6, lines 23-27. The transceiver used to transmit data needs software to perform the data transmission);

(d) receiving data packets from an electronic device through the software interface (col. 6 lines 23-27. Again the receiver needs software to perform the task of receiving data); and

(e) transmitting the data packets received from an electronic device to the network through the network interface (col. 6 lines 23-27).

Petersen et al do not teach that communicating data is between simulation of an electronic device and a network.

Hellestrand et al teach this limitation (col. 7, lines 37-54, col. 8, lines 30-37).

It would have been obvious to one of ordinary skill in the art to combine the teachings of Petersen et al and Hellestrand et al. Hellestrand et al's teaching would have formed a cosimulation system to simulate a target processor executing the user program that provides for extreme rapid simulation of the software (col.8, lines 4-13).

Applicant respectfully traverses the Examiner's rejection of Claims 1-4, 13-16 and 19-21. As amended, Claim 1 recites a method in which data is communicated between a simulation of an electronic device and a network to simulate the interaction between the electronic device and a network:

1. A method for simulating an electronic device that interacts with a network, the simulation being carried out by a program executing in a host computer, the simulation includes simulating the electronic device's interaction with the network, the method comprising:

(a) receiving data packets designating the electronic device from the network through a network interface; and

(b) transmitting the data packets to the simulation through a software interface to provide data packets for simulating the electronic device's interaction with the network.

(emphasis added)

As explained in Applicant's Specification, at page 2, lines 25-34, for example, the present invention provides data to the simulation at the speed of the electronic circuit simulation, rather than at network speed, which is a significant technical challenge for the prior art (for the technical challenge of the prior art, see, e.g., Applicant's Specification, at page 1, line 21 to page 2, line 16):

According to the present invention, data packets addressed to a device under simulation, or alternatively, addressed to a workstation connected to the network through the circuit simulation, is received and stored in

buffers of the host computer. (In one example, a workstation is connected to a network through a simulated network interface.) The interface software in the host computer repackages the data packet into a second format for transmission to the simulated device at the speed of the circuit simulation. Under this arrangement, the interface software in the host computer need not send to the circuit simulation, for example, the preamble required to synchronize the clocks of the network and the circuit simulation, because the circuit simulation is usually not capable of providing an analog interface required to respond to the preamble.

In contrast, at col. 7, lines 55-59, Hallestrand teaches simulating a single electronic system containing a target processor and a target digital circuitry. At col. 8, lines 30-37, upon which the Examiner relies for his rejection, Hellestrand teaches communicating control signals exchanged between simulations of these two parts of the single electronic system, which has no bearing on the interaction between an electronic device under simulation and a network:

An interface mechanism 119 is coupled to both the processor simulator 107 and the hardware simulator 103 and enables communication between processor simulator 107 and hardware simulator 103. Processor simulator 107 includes a communication mechanism 141 to pass information to the hardware simulator 103 using the interface mechanism when an event requires interaction of user program 109 with the target digital circuitry.

Thus, the combined teachings of Petersen and Hellestrand neither disclose nor suggest Claim 1's limitation or its attendant benefit. Applicant therefore submits that Claim 1 and its dependent Claims 2-4 and 13-14 are each allowable over the combined teachings of Petersen and Hillestrand. Reconsideration and allowance of Claims 1-4 and 13-14 are therefore requested.

The Examiner rejected Claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Petersen, in view of Hellestrand, as the Examiner applied to Claim 1 above, and

further in view of U.S. Patent 5,303,347 ("Gagne"). The Examiner states:

12. As per claim 5, Petersen et al and Hellestrand et al do not teach changing the size of the first buffer at run time.

However, Gagne et al teach this feature (col. 5, lines 64-68).

It would have been obvious to one of ordinary skill in the art to combine the teachings of Petersen et al, Hellestrand et al, and Gagne et al. Gagne et al's teaching of changing the size of the first buffer at run time would have helped users store different sizes of data important to the simulation of electronic devices.

Applicant respectfully traverses the Examiner's rejection of Claim 5. Since Claim 5 depends from Claim 1, the combined teachings of Petersen, Hellestrand and Gagne, as discussed by the Examiner above, neither disclose nor suggest Applicant's Claim 5. Reconsideration and allowance of Claim 5 are therefore requested.

The Examiner rejected Claims 7-9 under 35 U.S.C. § 103(a) as unpatentable over Petersen, in view of Hillestrand, as applied to Claim 1 above, and further in view of U.S. Patent 5,761,486 ("Watanabe"). With respect to independent Claim 7, the Examiner states:

13. As per claim 7, Petersen et al and Hellestrand et al do not teach keeping a record of the data packets received from the network, the data packets transmitted to the simulation, the data packets received from the simulation; and the data packets transmitted to the network.

However, Watanabe et al teach these features (col. 6, lines 18-23).

It would have been obvious to one of ordinary skill in the art to combine the teachings of Petersen et al, Hellestrand et al, and Watanabe et al. Watanabe et al's teachings of keeping a record of the data packets received from the network, the data packets transmitted to the simulation, the

data packets received from the simulation, and the data packets transmitted to the network would have provided designers information of the simulation in order to analyze and evaluate the simulation of electronic devices.

Applicant respectfully traverses the Examiner's rejection of Claims 7-9. As Claims 7-9 each depend from Claim 1, the combined teachings of Petersen, Hellestrand and Watanabe, as discussed by the Examiner above, neither disclose nor suggest Applicant's Claim 7-9. Further, contrary to the Examiner's contention, Watanabe's col. 6, 18-23 does not disclose "keeping a record of the data packets received from the network, the data packets transmitted to the simulation, the data packets received from the simulation; and the data packets transmitted to the network":

A record format of each of records R0 to Rn indicative of the communication information of one packet in the file structure 21 includes: a transmitting source 72; a reception destination 74; a protocol identifier 76; a time 78; and communication data 80 constructed by a protocol header and data.

Accordingly, Claims 7 and its dependent Claims 8-9 are further distinguished over the combined teachings of Petersen, Hellestrand and Watanabe. Reconsideration and allowance of Claims 7-9 are therefore requested.

The Examiner rejected Claims 6 and 22-24 under 35 U.S.C. § 103(a) as being unpatentable over Petersen, in view of the Hellestrand as applied to Claims 1-4 above, and further in view of Lakshman article ("Lakshman"), which appeared in *IEEE/ACM Transactions on Networking*, vol. 5, No. 3, June 1997, pp. 336-350. With respect to Claim 6, the Examiner states:

16. As per claim 6, Petersen et al and Hellestrand et al do not teach discarding packets of data when the first buffer is full.

However, Lakshman teaches discarding packets when buffer is full (p. 337, col. 2, lines 21-23).

It would have been obvious to one of ordinary skill in the art to combine the teachings of Petersen et al, Hellestrand et al and Lakshman. Lakshman's teaching of discarding packets when buffer is full would have helped reduce resource and time for monitoring buffer and prevent overwriting old data that are in use with new data.

Applicant respectfully traverses the Examiner's rejection of Claim 6. As Claim 6 depends from Claim 1, the combined teachings of Petersen, Hellestrand and Lakshman, as discussed by the Examiner, neither disclose nor suggest Applicant's Claim. Reconsideration and allowance of Claim 6 are therefore requested.

The Examiner rejected Claim 10 under 35 U.S.C. § 103(a) as being unpatentable over Petersen, in view of Hillestrand, as applied to Claim 1 above, and further in view of the Chu article ("Chu"), ACM 0-89791-089-3/83/0300-0170. The Examiner states:

20. As per claim 10, Petersen et al and Hellestrand et al do not teach recording the throughput of the data packets.

However, Chu et al teach this feature (p. 171, col. 2, paragraph 5, lines 1-6).

It would have been obvious to one of ordinary skill in the art to combine the teachings of Petersen et al, Hellestrand et al, and Chu et al. Chu et al's teaching of recording the throughput of the data packets would have provided designers performance statistics of devices under simulation to make decisions about modification, re-design, or adjustment regarding those devices.

Applicant respectfully traverses the Examiner's rejection of Claim 10. As Claim 10 depends from Claim 1, the combined teachings of Petersen, Hellestrand and Chu, as discussed by the Examiner, neither disclose nor suggest Applicant's Claim 10. Reconsideration and allowance of Claim 10 are therefore requested.

The Examiner rejected Claims 11-12 under 35 U.S.C. § 103(a) as being unpatentable over Petersen, in view of Hillestrand, as applied to Claim 1 above, and further in view of U.S. Patent 6,757,367 (“Nicol”). The Examiner states:

21. As per claim 11, Petersen et al and Hellestrand et al do not teach modifying the packets.

However, Nicol teaches this feature (col. 24, lines 35-39).

It would have been obvious to one of ordinary skill in the art to combine the teachings of Petersen et al, Hellestrand et al, and Nicol. Nicol's teaching of modifying the packets would have made packets suitable for receipt by the simulation.

22. As per claim 12, Petersen et al and Hellestrand et al do not teach modifying includes removing a preamble from a data packet.

However, Nicol teaches this feature (col. 24, lines 35-39).

It would have been obvious to one of ordinary skill in the art to combine the teachings of Petersen et al, Hellestrand et al, and Nicol. Nicol's teaching of modifying includes removing a preamble from a data packet would have made packets suitable for receipt by the simulation.

Applicant respectfully traverses the Examiner's rejection of Claims 11-12. As Claims 11-12 each depend from Claim 1 and 21, the combined teachings of Petersen, Hellestrand and Nicol, as discussed by the Examiner, neither disclose nor suggest Applicant's Claims 11-12. Reconsideration and allowance of Claims 11-12 are therefore requested.

Newly presented independent Claims 25, 37 and 47 each also recite handling data related to simulating the electronic device's interaction with the network:

25. A method for simulating an electronic

device that interacts with a network, the simulation of the electronic device being carried out by a program executing in a host computer, the simulation including simulating the electronic device's interaction with the network, the method comprising:

- (a) receiving data packets designating the electronic device as a source through a software interface from the simulation of the electronic device's interaction with the network; and
- (b) transmitting the data packets to the network through a network interface.

* * *

37. A computer-readable medium for use in connecting a simulation of an electronic device to a network, wherein the simulation is to be carried out by a program executing in a host computer, and wherein the simulation of the electronic device includes simulating the electronic device's interaction with the network; the computer-readable medium comprising computer-executable instructions for:

receiving data packets designating the electronic device from the network through a network interface; and

transmitting the data packets to the simulation through a software interface to provide data packets for simulating the electronic device's interaction with the network.

* * *

47. A computer-readable medium for use in connecting a simulation of an electronic device to a network, wherein the simulation is to be carried out by a program executing in a host computer, and wherein the simulation of the electronic device includes simulating the electronic device's interaction with the network; the computer-readable medium comprising computer-executable instructions for:

receiving data packets designating the electronic device as a source through a software interface from the simulation of the electronic

device's interaction with the network; and

transmitting the data packets received from
the simulation to the network through a network
interface.

Thus, for the reasons already discussed above, Applicant submits that independent Claims 25, 37 and 47, and their respective dependent Claims 26-36, 38-46, and 48-56 are each allowable over the combined teachings of prior art, in any combination discussed above.

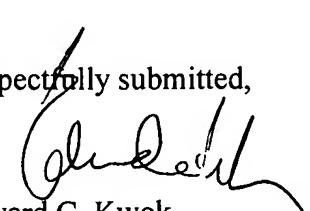
The Examiner allowed Claims 17-18. Claims 57-60 recite apparatus and computer readable media in connection with the subject matters of Claims 17-18. Claims 57-60 are therefore believed also allowable.

Claims 61-63 are also believed allowable over the cited prior art.

Accordingly, all pending claims (i.e., Claims 1-2, 5-14, 17-18, and 25- 63) are believed allowable and their allowance is therefore requested. If the Examiner has any questions regarding the above, the Examiner is respectfully requested to telephone the undersigned Attorney for Applicant at 408-392-9250.

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_____ Attorney for Applicant(s)	_____ Date of Signature

Respectfully submitted,


Edward C. Kwok
Attorney for Applicant(s)
Reg. No. 33,938

Law Offices of
MacPherson Kwok Chen & Heid LLP
1762 Technology Drive, Suite 226
San Jose, CA 95110
Tel: (408) 392-9250
Fax: (408) 392-9262